SEVERN TRENT STL

STL Knoxville
5815 Middlebrook Pike
Knoxville, TN 37921

Tel: 865 291 3000 Fax: 865 584 4315
www.stl-inc.com

ANALYTICAL REPORT

PROJECT NO. 142541

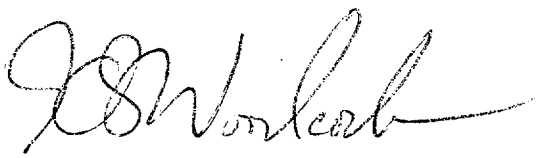
Focus/US Filter Westates 9056

Lot #: H6D040102

William Anderson

STL Knoxville
5815 Middlebrook Pike
Knoxville, TN 37921-5947

SEVERN TRENT LABORATORIES, INC.



Kevin S. Woodcock
Project Manager

April 25, 2006

ANALYTICAL METHODS SUMMARY

H6D040102

PARAMETER	ANALYTICAL METHOD
Total Chlorine	KNOX WC-0016

References:

KNOX Severn Trent Laboratories Knoxville, Facility Standard Operating Procedure.

SAMPLE SUMMARY

H6D040102

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
H2H65	001	G-2886-R1-SPENT ACTIVATED CARBON	03/28/06	
H2H66	002	G-2984-R2-SPENT ACTIVATED CARBON	03/29/06	
H2H67	003	G-3067-R3-SPENT ACTIVATED CARBON	03/30/06	

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

PROJECT NARRATIVE
H6D040102

The results reported herein are applicable to the samples submitted for analysis only.

This report shall not be reproduced except in full, without the written approval of the laboratory.

The original chain of custody documentation is included with this report.

Sample Receipt

Custody seals were not present upon sample receipt at STL Knoxville; however, samples were hand delivered.

The "Relinquished by" field on the chain of custody documentation did not contain a signature.

Quality Control

Unless otherwise noted, all holding times and QC criteria were met and the test results shown in this report meet all applicable NELAC requirements.

The samples were prepared for total chlorine using SOP number KNOX-WC-0016 (based on ASTM Method E442 and SW-846 Method 5050). The sample is oxidized by combustion in an oxygen flask at atmospheric pressure or a bomb containing oxygen under pressure. The liberated halogen compounds are absorbed primarily as halides in a sodium carbonate/sodium bicarbonate buffer solution. The combustion products are collected by repeated rinsing of the combustion apparatus, and analyzed by ion chromatography in accordance with SOP KNOX-WC-0005 (based on SW-846 Method 9056). The results are calculated using the following equation:

PROJECT NARRATIVE
H6D040102

$$C = \frac{C_{com} \times V_{com}}{W} \times 1000$$

Where:

C	=	concentration of analyte in the sample, mg/kg.
C_{com}	=	concentration of analyte in the combustate, mg/L.
V_{com}	=	total volume of combustate, L.
W	=	weight of sample combusted, g.

The matrix spike recovery for sample G-2886-R1-Spent Activated Carbon was outside control limits for total chlorine. The laboratory control sample showed acceptable results indicating that the analysis was in control. The matrix spike result is attributed to matrix effects, specifically sample heterogeneity. The percent recovery calculation is influenced by the native amount of chlorine present in the samples. Since the samples are solids, sample heterogeneity is expected. For instance, if a matrix spike analysis uses an aliquot of the sample that has a higher chlorine content than the original analysis to which it is compared, then the calculated recovery will be elevated.

The duplicate RPD result for sample G-2886-R1-Spent Activated Carbon is outside control limits. The laboratory control sample showed acceptable results indicating that the analysis was in control. The duplicate result is attributed to sample heterogeneity. Sample heterogeneity effects are noted for the matrix spike as well as the duplicate analysis.

The samples for the three runs associated with this project were compared for consistency. A wide range of results was noted, consistent with sample heterogeneity that is common for solid matrices.

Sample Data Summary

STL Knoxville - ACS

Client Sample ID: G-2886-R1-SPENT ACTIVATED CARBON

General Chemistry

Lot-Sample #...: H6D040102-001 **Work Order #...:** H2H65 **Matrix.....:** SOLID
Date Sampled...: 03/28/06 **Date Received..:** 04/02/06

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Chlorine	**3860 J**	**900**	**mg/kg**	**KNOX WC-0016**	**04/17-04/19/06**	**6107072**

Dilution Factor: 4.5 MDL.....: 279

NOTE(S):

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

STL Knoxville - ACS

Client Sample ID: G-2984-R2-SPENT ACTIVATED CARBON

General Chemistry

Lot-Sample #...: H6D040102-002 **Work Order #...:** H2H66 **Matrix.....:** SOLID
Date Sampled...: 03/29/06 **Date Received..:** 04/02/06

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Chlorine	**4740 J**	**900**	**mg/kg**	**KNOX WC-0016**	**04/17-04/19/06**	**6107072**

Dilution Factor: 4.5 MDL.....: 279

NOTE(S):

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

STL Knoxville - ACS

Client Sample ID: G-3067-R3-SPENT ACTIVATED CARBON

General Chemistry

Lot-Sample #...: H6D040102-003 **Work Order #...:** H2H67 **Matrix.....:** SOLID
Date Sampled...: 03/30/06 **Date Received..:** 04/02/06

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Chlorine	**3650 J**	**880**	**mg/kg**	**KNOX WC-0016**	**04/17-04/19/06**	**6107072**

Dilution Factor: 4.4 MDL.....: 273

NOTE(S):

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.